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DISEASES OF THE CHEST

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Editorial Comment

SUCCESSFUL MEETING AT SAN FRANCISCO The fourth Annual Meeting of the American College of Chest Physicians (formerly the Federation of American Sanatoria) has passed and it is now history. Much has been accomplished during its short life, much needs to be done.

The College has shown a healthy growth in its membership during the past year, and the Officers and Fellows of the College face the future with hope and encouragement.

All of the Sessions were well attended and the committee reports and scientific papers were enthusiastically received.

The American Medical Association with whom the American College of Chest Physicians affiliates has made a new departure from its customary procedure by naming the cities for its annual meetings three years in advance. St. Louis, Missouri, was accorded the meeting for 1939; New York City for 1940; and Cleveland, Ohio, for 1941. We trust that the Fellows of the American College of Chest Physicians will make plans to attend all of these meetings. F. W. B.

COLLEGE ELECTS OFFICERS Dr. Ralph C. Matson, Portland, Oregon, was elected as the President Elect of the American College of Chest Physicians at the Fourth annual meeting of the College held at San Francisco, June 12th.

Dr. Champ H. Holmes, Atlanta, Georgia, who was elected as President Elect last year at Atlantic City was inducted into office as President. He succeeds Dr. Edward W. Hayes, Monrovia, California.

Dr. Benjamin Goldberg, Chicago, Illinois, was elected First Vice-President and Dr. Willard B. Soper, New Haven, Connecticut, was elected Second Vice-President. Dr. Robert B. Homan, Jr., El Paso, Texas, was re-elected Secretary-Treasurer.

Dr. Frank Walton Burge, Philadelphia, Pennsylvania, was re-elected as the Chairman of the Board of Regents for four years.

The members elected to the Board of Regents and to the Board of Governors will be announced in a future issue of *Diseases of the Chest*. C. M. H.

PRESIDENT'S ADDRESS*

American College of Chest Physicians

EDWARD W. HAYES, M.D., F.A.C.P.**
Monrovia, California

INASMUCH as this is a relatively new organization, still going through the formative period, I feel that it is fitting that I should confine my remarks at this time to the development of the organization as it has taken place so far and to the purposes of the organization as they exist at the present time.

This organization came into existence approximately three years ago. Primarily, it was composed of physicians engaged only in private sanatorium work. As I understand it, the organization, at its inception, had two main objectives. The first was to bring about a closer association in tuberculosis work of the men in the general practice of medicine with those specializing in diseases of the lungs. The second objective was to emphasize the importance and the value of sanatoria, in general, in the treatment of pulmonary tuberculosis, and particularly to emphasize the place of private sanatoria in caring for those cases of tuberculosis who, because of their financial status, were not eligible to and, according to the principles guiding the practice of medicine in this country at the present time, should not be cared for in tax supported institutions.

Inasmuch as the membership of the original organization was limited to those physicians connected with private sanatoria and inasmuch as one of its objectives was to emphasize the place of the private sanatorium, the organization exposed itself to the criticism of being selfish in its motives. Although I had no part in the launching of the organization, I had, for a long time, shared the feeling that there was in those phases of the tuberculosis work, which have to deal with its medical aspects, need for an organization composed entirely of physicians. The motives of such an organization must, however, be unquestionably altruistic.

In medicine, as a whole, and in any branch of medicine, it is the practicing physician who alone appreciates and who alone understands many of the practical problems which arise, and, because of this understanding, it is he alone who is able to work out the solution of these problems. It has not been the idea of its members that this organization should, in any way, supplant, but rather that it should supplement the National Tuberculosis Association and other tuberculosis associations in their activities, which are purely medical, in coping with the tuberculosis problem.

The outgrowth of these various circumstances was that the organization definitely decided at the Atlantic City meeting last year to limit its purposes to assisting, wherever possible, in bringing about conditions whereby the man in the general practice of medicine will be in a position to fit more efficiently into the picture. To do this, our efforts must necessarily be directed along different lines.

In line with this same course of action, it was also decided at Atlantic City that, instead of limiting the membership to physicians connected with private sanatoria, membership in the organization should be open to the many physicians who are connected with public sanatoria or who are not connected with sanatoria at all, as well as those engaged in other phases of tuberculosis work, such as research or teaching. At the same time, the name of the organization was changed from The Federation of American Sanatoria to The American College of Chest Physicians, which it was felt would be all inclusive.

During the past year the organization has grown rapidly. For the present, it was thought best to limit our membership to 500. To be acceptible, applicants must, of course, be reputable physicians and at least twenty-

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* Delivered at the Fourth Annual Meeting of the American College of Chest Physicians held at San Francisco, June 12, 1938.

**Retiring president of the American College of Chest Physicians.

nine years old. They must have been in the practice of medicine or teaching or research work for five years, during which time, the major part of their work must have been devoted to some phase of tuberculosis or other diseases of the lungs.

Originally, one of the methods by which the organization attempted to reach the general practitioner of medicine was by the publication of our journal known as *Diseases of the Chest.* This publication attempted to bring to the man who is already out in the field of general practice, the practical side of the purely medical problems involved in the handling of tuberculosis. This journal has had a wide circulation, which is gradually increasing. Over 400,000 copies have been sent out and, as far as we are able to learn, it is being well received, and we feel it is at least tending to keep the man in general practice tuberculosis conscious. At the present time, the continuation of this journal is one of the main objectives of the organization.

A number of the county and other tuberculosis associations are now purchasing group subscriptions to this journal. They are permitted to do this at cost and these associations, in turn, are giving them gratis to a selected group of physicians in their communities. We hope that more tuberculosis associations will see fit to make this same or a similar effort in distributing this journal.

As a second objective or line of endeavor, during the past year, the organization has instituted as part of its program the bringing about of a more widespread appointment of special committees on diseases of the lungs in the various county and state associations. Already, in some of our eastern states, considerable has been accomplished along this line and the way in which this work has been received indicates that it will become much more extensive in the next few years. The object of these committees is to increase the number of talks and papers on phases of tuberculosis pertaining to the work of the general man, in the programs of medical associations, county, state and national, as well as to increase the number of educational demonstrations and clinics and postgraduate work available to the man in general practice. Since its inception, this organization has endeavored particularly to increase the number of papers pertaining to diseases of the lungs on the programs of the American Medical Association meetings.

In addition, it is very strongly felt by the members of this association that if our efforts in soliciting the interest and efficient cooperation of the general man are to attain the desired results, something should be done to reach the future doctor before he has completed his undergraduate medical education and gone out to take up the burden of earning a livelihood and establishing himself in practice. As a rule, unless, during his medical school education, the student has been given a workable understanding of tuberculosis as a disease, it is too late, after he has graduated and become established in practice, for him to be able to obtain the necessary knowledge and understanding. He is then too busy with too many other things.

Consequently, the third objective of this organization is to lend assistance in furthering the movement to establish a somewhat uniform and efficient undergraduate teaching of the diagnosis and treatment of tuberculosis in our medical schools, a system wherein the graduating student will have been taught not only to think intelligently regarding the diagnosis of tuberculosis, but also to think intelligently in regard to the modern treatment of this disease.

The late Lawrason Brown very wisely said, "The failure to diagnose tuberculosis is very often the failure to think about the disease." And I feel I can truthfully add that today, perhaps more serious errors are made in advice to patients regarding treatment after the diagnosis is made than are made in connection with the diagnosis.

A survey made by the Statistical Committee of this organization one year ago in regard to the undergraduate teaching of diseases of the lungs in all the medical schools in the United States revealed that in 57 out of the 66 schools that took enough interest to reply to the questionnaire, there were eleven in which there was no one on the faculty specializing in diseases of the lungs. It also revealed that about half of the teaching of diseases of the lungs in the various medical schools is being done by men other than those specializing in this field. I very much doubt if any major specialty, regardless of its mor-

tality or morbidity rate, is handled in such an unsatisfactory manner in our schools.

I need not express to this group what a handicap a situation such as this creates for the oncoming doctors on whose shoulders is going to rest, to a large extent, the solution of our tuberculosis problems. Many of these men are going out into the field of practice with the same understanding of diseases of the lungs that you and I had, and in my own case, that understanding was about equal to what it was when I graduated from academic college. Incidentally, today, my class is celebrating the twenty-fifth anniversary of our graduation back in Minneapolis.

After five years in general practice in a small midwest town, with a typical picture of pulmonary tuberculosis, including a recent hemorrhage, I went back to Minneapolis to consult what I considered the most outstanding of my teachers in this line. I was told I had the "flu" and that I could go back to work in a week or two. Had it not been for a chance circumstance that placed me in the hands of a man who had had tuberculosis himself and who, consequently, was well qualified in the diagnosis and treatment of the disease, I would have been sent away for me and my family to join that tragic parade, which perhaps is not quite so large as it was twenty years ago, but is still large enough to be apalling, and which still passes before your and my ears and eyes practically every day.

A small proportion of our medical schools at the present time have excellent systems for the teaching of diseases of the lungs, but, in many instances, this subject is not taught very much more efficiently than it was twenty-five years ago. As one having worked for the past sixteen years in an institution that has a large number of internes that are drawn, more or less, from all over the United States, it is interesting to note how those coming from schools with efficient teaching facilities stand out in their ability to think in relation to the diagnosis and intelligent treatment of tuberculosis.

It is no doubt true that all branches of medicine are clamoring for more time and more efficient teaching in their special lines in medical schools. In considering tuberculosis, however, we must remember that we are dealing with a disease that is almost entirely preventable and a disease that is the most curable of all chronic diseases, yet which today causes more deaths during the productive period of life than any other disease, to say nothing of the additional great loss of time and money and the suffering caused by the disease as it is now allowed to go on.

During the past year, I have discussed this situation, mostly by correspondence, at some length with Dr. Zapffe, secretary of the Association of Medical Schools. He said that he realized the situation in undergraduate teaching of diseases of the lungs, in many instances, is not good and that it is the fault of the teachers and the system, or lack of system, used in teaching, and that he, as secretary of the Association of Medical Schools, would welcome a plan whereby this situation could be rectified.

It is not particularly the allotment of more time that we need in the curricula of our medical schools for the adequate teaching of tuberculosis or diseases of the lungs, but, as Dr. Zapffe pointed out, the first thing we need is teachers, not only with a teaching knowledge of the subject, but with ability to teach. The second thing we need is a comprehensive teaching system, because it goes without saying that, without system, the efforts of any teacher, regardless of his qualifications, are of little avail. Yet what a large proportion of the teaching of chronic diseases of the lungs in many of our medical schools is done in a hit or miss manner today. To meet this condition, there is an opportunity for associations interested in tuberculosis work to create situations where good teachers must and will be supplied and where efficient teaching will be carried out.

In an attempt to accomplish this third objective, at the beginning of the year, this organization appointed a committee on undergraduate education in medical schools. The National Tuberculosis Association, this year, also has a committee on this subject. Inasmuch as this organization recognizes the National Tuberculosis Association as the parent organization and wishes, as far as possible, only to supplement the work of the National, the activity of our committee was held in abeyance, awaiting action on the part

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The Care of the Tuberculous Patient After Leaving the Sanatorium

JOHN B. HAWES, II., M.D.
Boston, Massachusetts

I am a firm believer in the sanatorium treatment of tuberculosis. I am sure that every tuberculous patient, if humanly possible, regardless of race or creed or of social or economic status, should spend some time at least in an institution devoted to the treatment of this disease. Old age is almost the only contraindication. Of this I am certain.

But—and this is very important—I likewise believe that perhaps the most vital part of the role played by the sanatorium comes before the patient enters, which means early recognition of the disease, and likewise, *after* his departure from its sheltering walls which means prolonged and intensive aftercare. It is of the latter that I am dealing with here.

I was once asked by the secretary of the Boston Tuberculosis Association: "Dr. Hawes, for how long a time after their discharge from our preventorium should our 'aftercare' worker continue to visit our children in their homes?" My answer was prompt and decisive: "Until they die of old age or from some other cause!" This applies to adults as well as to children. If we are going to make a sound investment of the millions that have been spent in sanatoria and their equipment we must do a complete job; if we are aiming not only to prolong lives but to make useful and self-supporting citizens out of these exconsumptives we must realize that their stay in an institution is a part, and a minor part, of treatment, the most important phase of which comes later.

How seldom is this realized by either patient or his physician! John Jones leaves the "san" plus twenty-five or thirty more or less useful pounds and a normal temperature and pulse, only too anxious to forget the past and to make up for lost time. His physician at the institution, usually overworked and too often drowned in routine, bids him godspeed and admonishes him to take care of himself and not to work too hard, and to report regularly to his family physician. Often a more or less perfunctory letter is sent to the local board of health and perhaps to his physician which is too soon forgotten and placed on file. And then six months or a year later the same patient again applies for readmission in worse condition than he was before.

This is no exaggerated picture but represents something that is happening every day all over this country. I do not say that all of these relapses can be prevented and that the tragedies that go with them are unnecessary ones. But I do maintain that many of them are preventable if we only take proper steps to prevent them. The question is: What are these steps?

It is obvious that much of the work must be done while the patient is still in the sanatorium. Time and time again I tell patients, who quite properly insist on having full details as to what they must do in the immediate future, that I am far more concerned with their condition one, five or ten years from now than I am as to how they will be one or two months hence. If every physician in our sanatoria would be not less concerned with the immediate effects of lung collapse or the question of doing a phrenic or of taking out some ribs, but certainly *more* interested in the patient's condition years hence, our results would be better. "Where there is no vision the people perish," said Solomon. If every sanatorium had a nurse, social worker or at least some understanding person whose duty it was to talk at length, intimately and in detail with the patient, not once but many times during the month or so prior to his discharge and to explain to him that he was about to enter what I call "the danger period of treatment," namely, the first six months or year after his discharge, our relapses would be fewer. I have sent dozens of patients to Saranac Lake during the past twenty-five to thirty years and I hope and believe that every doctor there is a warm personal friend of mine. My only criticism of Saranac is that my patients return, usually full of health and vigor but not what I

would call properly educated as to how they must conduct themselves during the months subsequent to their departure. They are altogether too unaware of the dangers that will beset them during this period.

It is interesting to trace the development of our efforts to better this state of affairs. As it was Massachusetts that opened the first state sanatorium in this country and was thus a pioneer in the rational treatment of tuberculosis, perhaps a brief description of what we have done and tried to do in this direction and where we have failed will not be amiss.

Back in 1907 we had one and only one state sanatorium. It was then decided to build three more and in other ways to try to put our commonwealth on a better footing as far as tuberculosis was concerned. I was appointed secretary of the commission to do this work which position I held with a more or less constantly changing board of trustees for the next fifteen years. We built and opened three new sanatoria and felt quite proud of a job well done. I, having charge of admissions to these institutions, soon noticed that old patients were applying for readmission almost as fast as new ones were trying to get in. It was evident that something was wrong. We then began sending our "discharge letters." When a patient left any one of our four sanatoria the superintendent wrote a letter giving certain important facts, among which were the patient's condition at entrance and discharge, presence or absence of bacilli in the sputum, his attitude toward treatment along with recommendations for the future. This letter went to the patient's doctor or to the nearest clinic and to the local board of health. As hundreds of these letters had to be written they were perforce more or less brief and perfunctory but they did a certain amount of good at least.

Much more remained to be done. At that time local public health nurses to do home visiting in tuberculosis and to help and instruct these men and women so recently deprived of the close and watchful care of the sanatorium, were conspicuous by their absence. Our board tried to fill this gap by appointing one woman whose gigantic task it was to visit every patient as soon as possible after his or her discharge. As these patients came from towns and cities all over the state her job was a difficult one. Gradually, however, as local health nurses were found who could cope with this problem her task became easier and she was able to cross off from her list an increasing number of localities. This system is now in existence in Massachusetts and has developed amazingly. We now have four state sanatoria and a magnificent group of seven county institutions along with several high-grade local hospitals for tuberculosis, each with its own out-patient department to which patients are urged to return for frequent check-ups while some have their own corps of nurses to do home visiting and follow-up work. From the point of view of state and municipal control the system is an admirable one and is at present working well. I am doubtful as to how long this improvement will continue, however, because of one grave fault which, unless remedied, will always militate against good results. This fault is that it does not include in its workings, in my opinion at least, the most important factor of all, namely, the general practitioner.

No one can deny that Massachusetts has made tremendous strides in handling tuberculosis, more so perhaps than any other state. It has spent millions upon millions in wonderful palatial institutions. The cost per bed of the four modest sanatoria our commission opened in 1909 and 1910 was $750. The cost of our Middlesex County Sanatorium, opened some four or five years ago, was $6000 per bed and that of Worcester County Sanatorium, a later one, $10,000 per bed! Our state Health Commissioner, whom the City of Detroit borrowed from us and who has now returned to the land of his birth, has openly stated that tuberculosis is a "public health problem, pure and simple" and three times in the year 1936 he stated at public meetings at which I was present that there would be "no tuberculosis in fifteen years!" I hope it will be true but doubt it for the simple reason I stated above—the great inherent fault in this or in any other similar state or federal system—the general practitioner is left out. In its ultimate analysis it is the general practitioner upon whom the burden of aftercare must rest. It is he who will and should be called upon to give advice and counsel to

these men and women who often somewhat bewildered by their newfound freedom are urgently in need of practical information on such vital matters as occupation, exercise and rest, diet and, particularly, how to safeguard others at home. It is this subject that I propose to discuss in some detail here.

Let us suppose then that to one of you, a general practitioner, for I am not talking to sanatorium men nor to health officials, comes a patient, John Jones, who has recently been discharged from a sanatorium. He has a wife and children to support. You will at once place him in one of three groups:

1. Those who are still clinically sick and who still require intensive treatment.
2. Convalescents who are more or less up and around but for whom work in the immediate future is out of the question.
3. Those whose disease is sufficiently arrested to permit them to go to work at once.

Those in the first group I will not discuss. They belong in bed.

The second class made up of convalescents is a difficult and important one. In the first place, I would urge that you get acquainted with your patient or renew your acquaintance with him. Sit down and talk with him frankly. Do not hurry. Warn him as to the dangers that will surround him. Insist that he report to you regularly at least once a month and see that he or someone in his family gets in touch with you once a week by telephone or in writing as to how he is getting on. The need of such periodical visits must be made absolutely clear. The patient must be made to understand their vital importance. No matter how well he may feel, and how free from symptoms, these visits must not be neglected. If he does not show up, send for him. Finances must not stand in the way. If the patient is indigent, clinics are usually available. I use a printed form for a weekly report on which temperature and pulse observations, hours of physical and mental exercise, and amounts of rest, coughing, raising, eating, sleeping, are recorded. These reports fill in the gap admirably for those to whom a weekly visit would be a hardship.

If the patient is of a very low mentality, or of a type that knows it all and simply will not cooperate, your hands are tied. Try and see that at least he does not infect others but do not waste too much time and energy on him otherwise. I quite agree with the late Sir Marcus Paterson of London who, when discussing this subject, said to me: "Dr. Hawes, there are two classes of tuberculous patients who will never get well and whom I will not treat—alcoholics and damn fools—you know!" After many years of experience I have met with few alcoholics and, I must admit, very few men and women whom I could not persuade to try and do the right thing if put up to them in the right way.

Don't let your patient put all the burden on you. Let him know fairly and squarely that his future lies in his own hands and that it is what lies under his head that counts—brains. Tell him that he must learn to be a "no" and not a "yes" man. Explain to him the meaning of the term, "benevolent selfishness" and that he simply must look after his own health and welfare first and foremost if he wishes to conquer his disease.

Next comes the question of protecting others in the family. Let the patient understand that no matter how long and how many times the sputum has been negative, it *may* become positive at any time especially following any cold or grippe and that at all times the greatest care is essential. Sleeping in a room alone is best and certainly one with no children. Tell him to keep the children out of his bedroom and to be absolutely "hard-boiled" about kissing, fondling them or any close or intimate contact with them. Have the sputum examined once a month. See that the "handkerchief reflex" is second nature to him. See that every other member of the family is or has been examined. In many cases this has already been done. If not, see to it yourself. Do a skin test on each of the children and x-ray and examine the positive ones. If the x-ray does not mean much to you, take it and the child to the proper authority for advice. Examine and x-ray the adults as well as children. Do not let any fear of being accused of "drumming up practice" prevent your doing this. Particularly, look for any elderly person in the family who may or may not have a chronic bronchitis or a winter cough.

Now as to diet. Most patients of the class we are discussing—convalescents—are dis-

tinctly overweight. Make up your own mind as to what the patient should weigh, his "optimum weight," as it were, and try and maintain a level slightly about it. Do *not* make him carry around fifteen to twenty pounds of useless fat, however. A glass of milk with each meal is usually advisable. Eggnogs, egg and milk, are inventions of the devil and should be prohibited.

Exercise: Find out what the patient has been allowed to do at the sanatorium and continue from there. If he has been given a twenty-minute walk twice a day, increase this very gradually. I allow my patients to ride—not *drive*—in an automobile about twice the time that they are permitted to walk. Let them understand that riding in an auto is a definite form of exercise. See to it that they must quit whatever they are doing, not *when* they feel tired, but *before* they notice signs of fatigue. This is not so easy. Tell them to approach and leave each meal in a rested condition. A good rule for these patients to follow for the rest of their lives is: "Don't run when you can walk; don't walk when you can stand still; don't stand when you can sit down and don't sit down when you can lie down."

One very important point and a most neglected one is to see that there is mental as well as *physical* exercise. A patient of mine was a cost accountant at a large firm. His disease was apparently arrested and he could walk six or seven miles without symptoms of fatigue. He only laughed when I told him that he must get his brain in training as well as his body. So I gave him a demonstration and made him take temperature and pulse before and after two hours' intensive work on tables, etc., or whatever cost accounting consists of. This he did for five days. The results were instructive, and a little humiliating to him. His pulse before this mental work was always in the low seventies but after it rose to 85 and 90 while his temperature, always normal or subnormal, after two hours' hard mental work ran 99 to 99.8. He learned his lesson. So much for these convalescents. Their progress must be slow and gradual; it cannot be hurried.

Now we come to the third class, those who are ready to do some work, and the question of getting them back on the job. Here we have a subject on which volumes have been and still are being written. It is really not so difficult, however, in most instances, simply requiring common sense and willingness to take a little trouble on the part of the physician and a degree of intelligence from the patient. Certain points stand out at once.

There is a large group of patients, mostly men, who are in such condition that they could perfectly well go back to work at regular hours were it not for the fact that their former job involved hard physical exertion or was in other ways a dangerous one. This group offers difficult and often pathetic problems. The man who has been stonecutting for years, or who has worked in a foundry or at a pick and shovel job, and who has been able to support wife and family at it now finds himself entirely and forever cut off from that means of earning his living. Here is a task that will test the ingenuity and indeed the humanity of every physician.

In considering this question the following suggestions may help:

1. When possible, try to get the ex-consumptive back to his old job unless, as shown above, it is a quite impossible one for him. Remember that there are three kinds of work to which he simply cannot return; first, that in which he is exposed to a dangerous dust—silica, such as granite cutting or foundry work, or the asbestos industry; second, that which requires hard physical exertion, and third, that work in which the hours are excessively long or which has to be done under unhygienic conditions. These are absolutely ruled out.

2. Try to arrange with his employer or in some other way that he can start in gradually, working only two or three hours at first and taking perhaps a month or even more before he is back at full time.

3. Do not look for a "light outdoor job." For all practical purposes, "there ain't no such thing." New England is crowded with the graves of those consumptives who have starved to death looking for these will-o'-the-wisps.

4. Tell the patient to be "hard-boiled"; that he must look after his own health first and the welfare of the concern for whom he is working second. Advise him frankly to fol-

low the example of WPA workers and not do any more than is absolutely required. Tell him to take his full hour off for lunch and to quit on the stroke of five. Advise him to take advantage of the many opportunities that are bound to come up even if only for two or three minutes—to sit down and absolutely relax. Above all, see that he takes the ordinary acute infections, grippe, coughs and colds, to which most of us pay little or no attention, seriously. If he comes down with a cold he *must* quit work and go to bed until it is gone. This is the only safe thing for him to do.

5. Finally, look around and avail yourself of local agencies and resources designed to help out in just such problems.

They may be grouped as follows:

A. Placement Bureaus or Committees.

My own association and the leading ones elsewhere maintain such a placement bureau with a full time worker in charge. Her job is to meet and talk with ex-consumptives referred to her by physicians or in some other way, to gain their confidence, and find out their capabilities and training and then through her connection with employers of all kinds to find or try to find suitable employment for them. This is always a difficult and, too often nowadays, an impossible task. It can be done, however.

B. Sheltered Workshops.

The Altro Shop in New York where about 200 men and women, each an "ex-tb.," are given employment, and my own Sheltered Workshop in Boston, are excellent examples of these. The one in New York, with 200 workers, I believe, about breaks even financially; ours in Boston with only 40 to 50 patients is bound to be in the red as far as dollars and cents are concerned. But there are many products of such a shop in the way of renewed faith, courage and happiness that make up for any monetary loss.

At such a shop men and women are given work and are paid by the hour for skilled and unskilled labor. The number of hours prescribed depends upon the patient's physical condition and is increased gradually as his general health and the state of the lungs permit. Positive sputum cases are not received. Each worker is under detailed and close medical supervision in the home as well as at work and is examined regularly. In our shop the men do high-grade cabinet work, furniture making and repairing of all kinds while the women make lingerie, ladies bags, etc. Our products are sold in the open market at current prices and our sales are not dependent, as is too often the case, upon sympathy and sentiment. Each year our sales have gone up so that we ask for less and less support from the foundation that enables us to carry on. The multiplication of such shops in the large centers of this country will go far toward solving the problem of employment for those handicapped by tuberculosis.

C. Farm and Industrial Colonies.

I would urge that every doctor at all interested in this subject on his next trip to England to visit Cambridge University and there fill his mind with beauty and tradition. Having done this, let him take a dilapidated taxi—there are no others—and drive the six or seven miles through delightful English countryside to the village of Papworth. Papworth is the best example of an industrial colony for consumptives in existence. It is a typical one-street English village with some 1500 inhabitants. Families live in quaint little cottages with "hostels" for single men and women. Tuberculous individuals in all stages are to be found there. Printing, upholstery and cabinet-making, building of portable houses, are minor products but the chief industry is the manufacture of valises, suitcases, traveling bags, etc., of all kinds from the cheapest to those of the very highest quality. The Papworth products are on sale and are known all over England and Scotland and have a well-deserved high reputation.

Here is employment for the tuberculous at its best. The setup in England has certain advantages that are lacking in this country. In the first place, many of the patients are subsidized at the rate of a pound a week from the crown or some other source. Next, the English climate is much more suited for such work than is ours. Finally, the English man or woman of the class that would go to such a colony is a very different individual from his American cousin. The "farm colony" idea has been tried over here with little or no success.

The average American workman who has had tuberculosis is as anxious to earn his living as anyone else but, after a prolonged stay of one or two years in a sanatorium, he insists, and quite properly so, that his work be where he can go home to his family at night or at least where he can see them frequently. He is quite unwilling to be placed at a distance off in the country, no matter how beautiful the surroundings. He is not interested in growing apples or in raising chickens, at least in the vast majority of cases.

Our Massachusetts attempt in this direction established by the late Dr. Vincent Y. Bowditch after struggling for years will, I believe, soon give up the fight. As a factor in the care and rehabilitation of the ex-sanatorium patient in this country attempts in this direction I believe are bound to fail.

Looking on this problem from a broad and practical standpoint, on what are we to depend for the care of the tuberculous man and woman upon leaving the sanatorium?

Will it be by subsidies from municipal, state or federal sources? Will it be by the multiplication of "placement bureaus" or of "sheltered workshops"?

To me the answer is definitely in the negative. All this will help but it will not go far by itself in solving the problem. It is the general practitioner, the biggest and most vital force in medicine today, that must and will shoulder the burden.

Its solution depends upon certain essential points that I have already called attention to here and which may be summarized as follows:

1. Plans for the future care of the patient should be commenced while he is still in the sanatorium.

2. Details concerning his exact condition upon discharge with recommendations for the future should be transmitted to his family physician and the patient told to report to him at once.

3. The family doctor should take complete charge of the case and emphasize the importance of his reporting regularly for examination and periodical x-rays.

4. If it has not already been done, other members of the family should be examined, the children given skin tests and if it is positive, x-rayed and the adults x-rayed in every case.

5. When the question of going to work comes up:

   A. Get him back to his old job if it is a suitable one.

   B. Try to have him start in gradually.

   C. Do not let him do work which involves hard physical exertion, exposure to dust or bad working conditions.

   D. Investigate such local resources as a "placement bureau" for the tuberculous, a "sheltered workshop," and take advantage of them. They may help you amazingly in solving this problem.

6. Finally, may I state that I consider this whole problem of after-care of such importance that I should like to see it on the program once a year of every medical society attended by general practitioners. A subject such as this would do infinitely more good than erudite and technical talks on how to take out ribs or how to crush the phrenic nerve or to do other intricate procedures.

Of the greatest importance of all, despite the openly expressed opinion on the part of many health officials of my own state and elsewhere that tuberculosis is "a public health problem, pure and simple," remember that it is a human problem as well. You and I are not interested in tuberculosis by itself. But we are deeply and vitally interested in human beings, men and women, who have tuberculosis, and in the problem as to how best and quickest they can be restored to health and happiness.

Reading time of papers published in
DISEASES OF THE CHEST
from five to fifteen minutes.

What of the Family Physician?

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FOR a long, long time the writer has marveled at the manner doctors have of complimenting themselves on being members of this noble profession of medicine. How complacently they enjoy sitting at some public gathering and hearing it so described, or seeing it so referred to, in the lay press or on the radio. How eagerly they listen time and again at medical meetings to some one, most often of their own number, reel off platitudes and encomiums on the greatest of professions and on the sacrifices made by its members at the altar of poor suffering humanity.

During the past few years the endless controversy over socialized medicine has brought the medical profession more and more into the lime-light and with it, from among their own members, the plea for the proper maintenance of the old "patient-family doctor" relationship. The question arises, "Does this very large group of physicians, the family doctors, really merit the trust and esteem that is imposed in them by uninformed and unsuspecting patients who have no means of gauging the true medical ability of those in whom they would place their confidence and the safety of the lives of themselves and their loved ones?"

To the relatively small group of physicians who are particularly interested in tuberculosis, the question has presented itself many, many times. The observation of palpably inadequate knowledge and understanding of the subject on the part of so large a number of physicians when dealing with the disease, forces the sad commentary that they have been weighed and found wanting when handling this still outstanding cause of death among our civilized peoples.

A generation is a brief period in the progress of medicine, but in that time such marvelous advances have been made in the field of tuberculosis that the whole picture of etiology, diagnosis, and treatment have markedly changed. The lowered death rate that has resulted from the advances needs no comment. The discoveries made and brought into practical use through research workers and the well organized army of specialists who have availed themselves of these discoveries, have produced results beyond the fondest hopes of a Koch or a Trudeau.

Has the general practicioner, the good old family doctor, been true to his trust however, in keeping abreast of these new means at his disposal so that he may at the earliest possible moment make them available to his patient? There has undoubtedly been a long step forward in general education and training on the subject of tuberculosis. This is to be taken advantage of during undergraduate days, as presented in the curricula of the medical schools of today. Later, there are greater opportunities than ever in postgraduate work for those who will avail themselves of it. However, it is to the discredit of a very large number of medical men that, while students in college and in the years after leaving it, they should seem so often to shun such ample facilities for education on the subject, showing no interest in, nor desire to master, tuberculosis.

The writer makes this observation after years of general and later special practice. Many have seemed to evade, actually fear, contact with the disease and if, in practice, they make a belated diagnosis of what has by this time already become an "advanced" type largely through their own indifference, they hasten to transfer it and literally, as well as figuratively, wash their hands of the case. There is a decided disinterest in their patient's welfare insofar as keeping themselves professionally fit to offer the best possible service in prevention, diagnosis, or treatment of tuberculosis.

Collateral reading on the subject becomes, in the mind of the average practitioner, a virtual waste of his time. This, it may be observed, holds true of his attitude toward a number of other outstanding present day causes of death about which patients daily consult their physician and from whom they have a just right to expect the latest and best approved methods of diagnosis and treat-

ment that the profession has to offer.

The medical degree of our accepted schools as well as the license to practice, which doctors display, should be ample assurance to the person seeking advice or treatment that the holder thereof possesses everything there is, within reasonable limits, on these subjects; but are often really a snare and a delusion instead. Through timely education in, and adoption in his practice of, modern methods, it becomes a false pretense for the family physician thus to fail at early diagnosis of any of the more serious afflictions that are leaders in the causes of death.

If specialization is open to criticism in present day practice, it certainly can be said of it with relation to tuberculosis, that had the relatively small group which have taken up this disease as a specialty, not done so, much of the present progress in its control would still be a mere hope. Hopefully, nevertheless, the tuberculosis physicians have continued and optimistically they have strived to interest more and more the family doctor in early diagnosis.

As a result it has been noted that frequently friction and discord develop in localities when the home doctors have been oblivious and indifferent to the advances being made in fighting tuberculosis. They have persisted in statu quo until volunteer health groups of laymen organize a campaign against the "Great White Plague" and bring into their community modern methods and personnel to wage the battle.

Realizing then, that he has been allowed to "stand-by" through his own lack of interest, the local family physician at this stage presents a definite antagonism to any such progressive health program even to the belittling of specialist professional services that had been made available to his people.

In many instances, through the past three decades, the writer has remarked how the volunteer organizations are manned almost entirely by laymen and their officers as often unable to enlist an active interest on the part of even one local physician. These organizations must dominate the tuberculosis situation in many places and as a result of the aforementioned attitude of the medical profession locally, are forced to secure the services of outside professional men who are expert in their particular line of work, much to the chagrin of the home man, our much-vaunted family doctor.

For such a condition the local physician has no one to blame but himself. He has been noted many, many times to be ignorant of the significance of relatively simple modern methods of diagnosis and treatment and inexperienced in their frequently very simple use. Means that have been written about, spoken about, demonstrated, and at his disposal all over the country for years.

It seems quite evident that every general practitioner should acquaint himself routinely with modern, up-to-the-minute procedures in the diagnosis and treatment of tuberculosis. For such an outstanding disease that is so frequently encountered by every one in practice, if he will but look for it, the doctor should be so equipped that his local nurses and lay workers and health officers would seek *him* first for information and advice.

Looking over the statistics, it is very noticeable that very few registration districts show the accepted relation between reported tuberculosis deaths and reported existing tuberculosis cases. *Why?* Absolute indifference on the part of the family doctor, to whose attention the case should first come, even if diagnosed late, to make such morbidity report to the proper health officer. It is the neglect engendered by that mental slant which, during the medical college course and hospital internships, leads the young medical man to "cut" tuberculosis ward classes and out-patient clinics as though they were poison and then in later years condemn the medical school and the hospital for failing to afford proper and sufficient facilities for studying this disease.

Solid and substantial advances are being made in all fields of medicine constantly although necessarily slowly; laboratory methods are devised just as slowly and meticulously; clinical practice presents the sternest tests and checks upon all that is new. All this makes for real progress. For the medical man, just as surely as in other lines, "input plus training equals output and quality." The noble profession must do more than hold its own, it must consistently advance and it can only advance by being

willing to continue to reinvest time and effort and funds for further education. He who keeps up with advances is he who outstrips his ordinary "run of mine" competitor. Postgraduate activities; collateral reading; participation in and attending medical group meetings; hospital ward and clinic services; preparation of scientific papers; attending graduate teaching seminars; all seem within reach of everyone and all are important. They will naturally require an expense of time and energy mostly, but is it not all too apparent that the successful man professionally (this is not necessarily synonymous with financially) is the one who is willing and happy to make this reinvestment in his life's chosen field?

The much-vaunted family doctor must prove himself worthy of the trust imposed in him with particular emphasis on tuberculosis,—its diagnosis, care, and treatment.

Hodgkin's Disease and Tuberculosis

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HODGKIN'S Disease is one of several disorders that is accompanied by progressive enlargement of the lymph glands. Opinions differ as to whether it should be classified with the neoplasms as lympho-sarcoma, with the blood dyscrasias such as the leukemias, or with the infectious granulomata as tuberculosis and syphilis.

Clinically, it closely resembles glandular tuberculosis with which it is often confused. Nearly every case of Hodgkin's Disease that has come under the observation of the writer in the past few years has been referred because of a previous diagnosis of tuberculosis or as a tuberculosis suspect. Next to tuberculosis, Hodgkin's Disease is the most common cause of progressive glandular enlargement. To make the picture more confusing, it is quite possible for tuberculosis and Hodgkin's Disease to co-exist in the same patient. In fact a considerable number of patients with Hodgkin's Disease develop frank pulmonary tuberculosis with positive sputum as a terminal stage of their disease.

Hodgkin's Disease usually occurs in the same age group as tuberculosis, i. e., in early adult life. There is a similar insidious onset, with loss of weight, increasing fatigue and weakness, a low grade fever and secondary anemia. However the glandular enlargement of Hodgkin's Disease is usually somewhat different from that of tuberculosis. The swelling is painless, and progresses from one group of glands to another. The glands remain firm, discreet and freely movable and do not tend to fuse together and break down and suppurate as tuberculous glands so frequently do.

Occasionally groups of internal lymph nodes, such as the tracheo-bronchial or retroperitoneal glands, are involved before any external enlargements are noted, and in such cases the diagnosis is difficult. When the thoracic group is primarily affected the resemblance to tuberculosis is often striking. Along with the debility there is an irritating cough and frequently dyspnoea from pressure on the trachea or bronchi. There may be hoarseness or complete loss of voice from pressure on the recurrent laryngeal nerve. Dyspnoea from pleural effusion is often the first symptom that brings the patient to the physician. Difficulty in swallowing from pressure on the esophagus is not uncommon. Examination of the chest does not reveal much abnormality unless there is pleural effusion or massive enlargement of the mediastinal glands. There may be noticeable dyspnoea or displacement of the heart from pressure. The spinal and para-sternal areas of dullness may be widened and there may be some rales due to the associated bronchitis. The x-ray will show an irregular mass in the mediastinum, which may be concealed by the heart shadow unless viewed obliquely. There are often patches of infiltration throughout the lung areas when scattered bronchial nodes are involved.

When Hodgkin's Disease involves the retro-

peritoneal glands it may closely simulate tuberculous peritonitis. There is abdominal pain and tenderness with various digestive disturbances, such as anorexia, flatulence, nausea or diarrhea, and frequently there is jaundice or ascites. A definite diagnosis is almost impossible without an exploratory laparotomy until the superficial glands begin to enlarge.

Like tuberculosis the blood picture of Hodgkin's Disease varies with the severity and stage of the disease. Essentially it is a progressive secondary anemia which in the later stages may become extreme. The number of white cells may be within normal limits in the early stage, but later there may be marked leucocytosis. The differential count is variable, but an increase in the number of eosinophiles is significant.

The final diagnosis of Hodgkin's Disease depends on microscopical examination of an affected gland. Preferably, an isolated gland should be excised for this purpose. The histological changes need not be described here, but they are quite characteristic, and in the hands of an experienced pathologist a positive diagnosis can usually be made.

For prognostic reasons it is extremely important to differentiate Hodgkin's Disease from glandular tuberculosis as early as possible. While glandular tuberculosis is comparatively mild and usually curable, Hodgkin's Disease invariably has a fatal termination. Surgical removal of isolated groups of enlarged glands or deep x-ray therapy may stay the progress of Hodgkin's Disease for a time, but death ordinarily occurs in from two to five years in spite of any form of treatment yet discovered.

Artificial Pneumothorax in Clinic Cases

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THE treatment of pulmonary tuberculosis without transplantation of the patient has always been a much more difficult task than treatment with institutional care. In fact, removal of the patient from his normal environment has proved so beneficial that until recent years physicians thought that the change of climate was responsible. It is now felt by most workers that climate plays a less important role, but, as pointed out by many writers the patient is unable to relax at home. The unvarying routine, better nourishment, and the force of precept and example are very important factors and not to be overlooked. These factors can be supervised a little more carefully in clinic work with good results.

Until recent years care of the tuberculous patient in the home and clinic has been a rather desultory procedure with a hopeless attitude on the part of the physician and all attendants. This was disastrous to the morale of the patient and endangered his recovery. The use of artificial pneumothorax has changed this attitude somewhat and is proving very beneficial to the patient mentally and physically as well as eliminating some of the danger to contacts. Pneumothorax has already been discussed at great length; its advantages and disadvantages, its dangers and contraindications have been reviewed thoroughly by those conversant with the subject and most of them agree, I believe, that the induction of pneumothorax in a new patient in the clinic is an undertaking fraught with many hazards.

It is better for the patient to have a few weeks of strict bed rest in an institution with careful supervision to determine whether the disease is progressing or regressing before pneumothorax is attempted. However tuberculosis is notoriously progressive and though small cavities may sometimes heal without collapse therapy this is the exception rather than the rule and some eighty-five per cent of all patients with open tuberculosis die within a period of five years under conservative treatment alone. In communities where there are no beds for those suffering with tuberculosis nearer than the State Sana-

torium, and a long list of patients waiting for those beds, it becomes a necessity to make some effort to stem the ravages of the disease both in the patient and in those whom he may infect. When we consider that there are about eight hundred thousand active cases of tuberculosis in this country and only about ninety thousand beds we can understand what an enormous number of people are in danger of infection. These facts emphasize the necessity; we are neatly trapped between Scylla and Charybdis. Most southern communities have few beds for the tuberculous and a large negro population which makes the problem more acute.

During the last months of 1933 stirred by the ringing dictum of Cleve Reviere we began to induce pneumothorax on a few selected cases waiting for admission to the State Sanatorium and to continue refills on patients discharged from the Sanatorium. Since that time we have given about four thousand injections of air to one hundred and thirty-five patients; sixty white and seventy-five negroes. A statistical report of the results obtained would be most difficult because of the transient character of some of the patients and their failure to co-operate; because of the varying stages of the disease and the types of pneumothorax used, expansile, static, and compression; because some of the patients have been to the State Sanatorium and others have not.

Our results correspond rather closely in most details to those reported by other clinics. We feel that the negroes with similar types of lesions did not respond quite so well as the white patients; probably because of economic reasons and lack of co-operation. There were only four untoward reactions; two in white and two in negro patients; none of them fatal. Ninety per cent of patients taking air for three months or longer have shown improvement in reduction of fever, cough and sputum, or gain in appetite and weight and most of them in all these respects. Satisfactory collapse has been obtained in most cases taking air for as long as twelve months and in many cases, of course, much earlier. Three cases not suitable for pneumolysis obtained satisfactory collapse after almost two years. They, of course, had shown improvement, both clinical and x-ray, during the twenty-four months. Also, as pointed out by many observers, marked clinical improvement occured in many cases where the collapse was not satisfactory from the x-ray point of view, i. e., the cavities were not completely closed. There have been relatively few effusions and only one tuberculosis empyema which occured in a far advanced case with bilateral involvement who had suffered spontaneous pneumothorax. The cases with the least involvement responded a great deal more readily and collapse was more often satisfactory. Also the younger patients responded more readily than the middle-aged and older.

Seven cases have been expanded and several others are being expanded at present. All patients are kept under very strict supervision while the lung is being expanded and for at least twelve months thereafter. Everything possible is done to keep the patient physically and mentally fit to gradually assume his accustomed place in society. The problem of rehabilitation is an essential part of the program and should receive careful consideration and meticulous attention to detail.

Granting that bed rest and institutional care is ideal before collapse is begun, since we cannot attain the ideal at present, our experience would seem to indicate:

1. That effective collapse should be applied as early as possible before excavation and bronchiogenic spread.

2. That x-ray should be used more extensively to diagnose early lesions.

3. That artificial pneumothorax in the home and clinic is a practical procedure.

4. That rehabilitation is an essential part of the program.

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Sedimentation Rate in Pulmonary Tuberculosis*

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AS early as 200 A. D., Galen noted that if blood is allowed to stand in a tube, a white line is formed but he did not correlate this with pathological changes. In 1791, John Hunter noted that the red blood cells settled more rapidly in acute inflammation. Further observations were made by Nasse in 1836, Davey in 1839, Muller in 1844, and Biernacki in 1894. It was then forgotten until 1918, when Fahraeus observed that the red blood cells settled more rapidly in the blood of pregnant women. This, at first, was heralded as an early diagnostic sign of pregnancy, but discarded when found to be unreliable before the third month. Its value in the presence of inflammatory or debilitating conditions, however, was recognized. Its value in gynecology was pointed out by Linzenmeier in 1920, Friedlander in 1924, and Polack in 1926; its value in tuberculosis by Cutler in 1926, and in urology by Weirbein in 1928.

Several theories have been advanced as to the mechanism of this phenomenon. Fahraeus believes that there is an alteration of the electrical charge of the red blood cells causing a loss of their repelling force and thereby bringing about their agglutination and more rapid sedimentation. Reyner contends that differences in surface tension of the blood plasma develop, causing a more rapid precipitation of the red blood cells. Hirsh feels that the sedimentation rate is influenced by a foreign protein in the circulation; in pregnancy, proteins of fetal catabolism; in infection, proteins of bacteria; in malignancy and coronary occlusion, proteins of necrotic tissue. The consensus, however, seems to favor the theory of an alteration in the serum fibrinogenglobulin ratio. Greisheimer has shown that there is a definite correlation between the serum fibrinogen and the sedimentation rate, and that the ratio is directly proportional to the concentration of the fibrinogen in the serum.

In normal metabolism there is a certain amount of tissue destruction. This is indicated by the so-called normal sedimentation rate variation. Certain physiologic conditions affect metabolism. These are reflected in the sedimentation rate. The rate is slightly higher in infants, children, senile individuals and during the menses. Greisheimer in a study of 174 sedimentation rates in 31 healthy individuals found that the sedimentation rate will vary from week to week in the same individual, but that tne variations will be within normal limits. According to Haverson and Petersen, meteriological conditions affect the sedimentation rate, the daily variations being as great as 100 per cent. In Patterson's determinations, taken at an altitude of 6231 feet, the sedimentation rate is lower for the higher altitude. The sedimentation rate also varies with the physical characteristics of the blood. Walton demonstrated that anemia has a distinct bearing on the sedimentation rate, the cells settling more rapidly the greater the anemia. For accurate determinations, correction of the sedimentation rate for anemia should be done and hematocrit readings taken on the same sample of blood. However, for practical purposes, since the majority of individuals have a red blood cell count of over 3,500,000, the readings would fall within normal limits. In pathological conditions the variations would be so slight as to have no practical significance. It is now generally conceded that in the presence of marked tissue destruction, the erythrocytes settle more rapidly. The toxin produced by the disease breaks down tissue protein, thereby stimulating fibrinogen formation. Hence the sedimentation rate is directly proportional to the amount of tissue destruction or the severity of the disease.

Several methods have been employed to measure this phenomenon. Originally Fahraeus measured the distance that the red cells settled in one hour. Linzenmeier measured the time it took a column of blood to settle a certain distance, arbitrarily set at

* Read before the Brooklyn Thoracic Society, February 19, 1937. From the Tuberculosis Service of the Kingston Avenue Hospital.

18 mm. Cutler has combined the two methods in graph form and his technic has become fairly universal. The original Cutler tube is a 6.5 cc. tube, graduated in tenths of a cc. Readings begin at zero at the 5 cc. mark at the top and go down to 50 mm. One-half cc. of sodium citrate solution and four and one-half cc. of venous blood are gently mixed in a syringe and placed in the tube. Readings are taken every five minutes for one hour and the observations are plotted on a graph, the horizontal lines of which represent divisions on the tube and the vertical lines intervals of time. He has modified the above technic using a 1 cc. tube with 0.1 cc. of sodium citrate solution and up to 1 cc. of blood. Comparative studies show that the two methods are identical. The advantage of the latter modification is apparent.

Pulmonary cases group themselves in four characteristic graph lines on Cutler's chart—the horizontal line, the diagonal line, the diagonal curve and the vertical curve. The horizontal line indicates the absence of any active destructive process and is similar to that found in clinically healthy individuals. It does not, however, exclude the possibility of disease which may be present in an inactive form as in the case of a well-healed tuberculosis. It may indicate the absence of any disease or the presence of disease not sufficiently active to disturb the normal stability of the blood. The diagonal line and the diagonal and vertical curves are abnormal findings and are directly proportional to the amount of tissue destruction. Therefore, we may say that in tuberculosis the diagonal line is an index of minimal activity without constitutional symptoms, and the diagonal and vertical curves, respectively, are indices of moderate and marked activity. By this method the normal rate for men is found to be between 2 and 8 mm. with an average of 3 and 4 mm., and for women between 2 and 10 mm. with an average of 5 and 6 mm.

In our series 100 consecutive discharges from the tuberculosis service at the Kingston Avenue Hospital, Brooklyn, were studied to determine the value of the sedimentation rate. The sedimentation readings were divided into four groups to correspond with Cutler's four graphs; Group I, or normal group, with a sedimentation rate to 8 mm., Group II, or quiescent group, with a sedimentation rate between 9 and 15 mm., Group III, or moderately active group, with a sedimentation rate between 16 and 20 mm., and Group IV, or very active group, with a sedimentation rate over 20 mm. The patients were all males. Hematocrit and red cell determinations were not done. There were 12 colored and 88 white men. Their ages ranged from 16 to 66 with 4 in the second, 43 in the third, 21 in the fourth, 21 in the fifth and 11 in the sixth decade.

All were considered active cases. Eight were minimal, thirty were moderately advanced, and sixty-two were far advanced. Of the minimal cases, 50 per cent had sedimentation rates below 15 mm. and 50 per cent rates over 15 mm. Of the moderately advanced cases, 50 per cent had rates under 15 mm. and 50 per cent had rates over 15 mm. Of the far advanced cases, 25 per cent had rates under 15 mm. and 75 per cent had rates over 15 mm.

ADMISSION CLASSIFICATION COMPARED WITH SEDIMENTATION RATE

	— GROUP —					Under	Over
Stage TBC.	I	II	III	IV	Total	15 mm	15 mm
Stage I	2	2	1	3	8	50%	50%
Stage II	7	8	6	9	30	50%	50%
Stage III	6	9	7	40	62	25%	75%

Though the sedimentation rate does not absolutely follow the actual extent of lesion, there is a marked tendency of a more elevated rate in the more advanced case provided it be an active case.

In correlating the sputum on admission with the sedimentation rate, the following was obtained. On admission, there were 68 cases with positive sputum and 32 with negative sputum. Of the six cases with negative sputum in Group IV, four later developed a positive sputum and one had a tuberculous empyema. With correction for these cases we find that 22 per cent of the positive sputum cases had a sedimentation rate under 15 mm. and 78 per cent had a rate over 15 mm. Of the cases presenting a negative sputum on admission, 70 per cent had a rate under 15 mm. and 30 per cent had a rate over 15 mm. The degree of activity, therefore, varies in direct ratio to the condition of the sputum.

ADMISSION SPUTUM COMPARED WITH SEDIMENTATION RATE

Sputum	— GROUP — I	II	III	IV	Total	Under 15 mm	Over 15 mm
Positive	8	8	6	46	68	23%	77%
Negative	7	12	7	6	32	60%	40%

Corrected for the cases that later became positive:

Positive	8	8	6	51	73	22%	78%
Negative	7	12	7	1	27	70%	30%

The constitutional activity of these patients was classified according to the National Tuberculosis Association classification: a, minimal constitutional activity; b, moderate constitutional activity; and c, marked constitutional activity. In our series 66 were classified as a; 13 as b; and 21 as c. Of the 66 cases with minimal constitutional activity, 34 per cent had a sedimentation rate below 15 mm. and 66 per cent had a rate over 15 mm. Of the 13 showing moderate constitutional activity, 39 per cent had rates under 15 mm. and 61 per cent had rates over 15 mm. Of the 21 showing marked constitutional activity, 9.5 per cent had rates under 15 mm. and 90.5 per cent rates over 15 mm. Constitutional symptoms, such as fever, elevated pulse, cough and expectoration, are not delicate indices of disease activity, as evidenced by patients whose symptoms will subside as soon as they are put to bed, long before there is any evidence of x-ray clearance or sputum conversion.

CONSTITUTIONAL ACTIVITY COMPARED WITH SEDIMENTATION RATE

Activity	— GROUP — I	II	III	IV	Total	Under 15 mm	Over 15 mm
a	12	17	12	25	66	34 %	66 %
b	3	0	2	8	13	39 %	61 %
c	0	2	0	19	21	9.5%	90.5%

On discharge the cases were divided into those that showed complete x-ray resolution, those that showed incomplete x-ray resolution and those that showed x-ray progression. Of those showing complete resolution, 80 per cent had a sedimentation rate under 15 mm. and 20 per cent had a rate over 15 mm. Of those showing incomplete resolution, 30 per cent had a rate under 15 mm. and 70 per cent had a rate over 15 mm. Of those showing progressive lesions, 21 per cent had a rate under 15 mm. and 79 per cent had a rate over 15 mm. We see, therefore, that there is a definite decline in the sedimentation rate with x-ray resolution, and that the rate tends to remain elevated in those cases showing little resolution or progressive lesions.

DISCHARGE X-RAY COMPARED WITH SEDIMENTATION RATE

X-Ray	— GROUP — I	II	III	IV	Total	Under 15 mm	Over 15 mm
Complete Resolution	30	17	5	7	59	80%	20%
Incomplete Resolution	2	5	3	7	17	30%	70%
Progression	3	2	2	17	24	21%	79%

The sedimentation rate was also checked against the sputum on discharge. Sputa were negative anywhere from one to seventeen months before discharge, the average being seven months. Negative sputa were all checked by concentrated examinations, and gastric lavage and guinea pig inoculations in some instances. On discharge 29 cases had positive sputum and 71 had negative sputum. Of the positive sputum cases, 38 per cent had sedimentation rates under 15 mm. and 62 per cent had rates over 15 mm. Of the negative sputum cases, 71.8 per cent had rates under 15 mm. and 28.2 per cent had rates over 15 mm. There is, therefore, a definite correlation between the condition of the sputum and the sedimentation rate, the negative sputum cases showing a lower rate than the positive sputum cases.

DISCHARGE SPUTUM COMPARED WITH THE SEDIMENTATION RATE

Discharge Sputum	— GROUP — I	II	III	IV	Total	Under 15 mm	Over 15 mm
Positive	4	4	1	20	29	38 %	62 %
Negative	31	40	9	11	71	71.8%	28.2%

The average length of stay in the hospital for this group of patients was seven months. The majority of our patients are transferred to the Municipal Sanatorium at Otisville for further observation after the disease becomes quiescent.

It seems, then, that the sedimentation rate does not indicate the extent of pathology, but is an index of pathological activity. We have seen cases of far advanced tuberculosis with positive sputum and open cavity with a normal sedimentation rate. This can occur in an old fibroid tuberculosis with no active tissue destruction. The above analysis has

shown, however, that the sedimentation rate can be a very important supplement to x-ray and sputum examinations in foretelling the trend of the disease. An acute episode can sometimes be predicted by a sudden unexplained drop in the sedimentation rate.

I think these points can best be demonstrated by selecting a few cases from our group.

J. A., an Italian, aged 23, was admitted July 10, 1936, with a far advanced lesion involving both lungs. His classification on admission was III a, weight 139, sputum G ii, and sedimentation rate 24 mm. He was put on absolute bed rest and transferred to the Municipal Sanatorium at Otisville at the end of four months, an apparently arrested case, with a gain of 24 pounds, negative sputum and sedimentation rate of 8 mm.

V. B., aged 23, of Armenian parentage, was admitted December 6, 1935, with an hemoptysis of two weeks duration. His classification on admission was III c, weight 121, sputum G v, and sedimentation rate 23 mm. X-ray showed a dense exudative lesion of the entire left lung. Left artificial pneumothorax was instituted and a satisfactory collapse obtained. His temperature became normal January 3, 1936, and his sputum negative January 15, 1936. He was transferred to the Municipal Sanatorium at Otisville on May 5, 1936, six months after admission with a gain of 19 pounds, a negative sputum for four months, and a sedimentation rate of 6 mm. Incidentally, at Otisville he developed a massive pleural effusion with no effect on the sedimentation rate. The effusion was a simple serous one.

H. S., an American, aged 29, was admitted February 7, 1936 with a moderately advanced lesion of the left lung with a cavity in the first anterior interspace. His classification on admission was II a, weight 131, sputum G x, and sedimentation rate 23 mm. A left phrenic exeresis and scalenotomy was performed on March 13, 1936. He was discharged July 20, 1936, as a quiescent case with a gain of six pounds in weight, sputum negative for four months, and sedimentation rate of 6 mm.

B. P., Polish, aged 45, was admitted November 1, 1934, with a far advanced lesion involving the entire left lung and a cavity 8x7 cm. in the extreme apex. Classification on admission was III c, weight 139, sputum G x, and a sedimentation rate of 28 mm. Artificial pneumothorax was instituted on the left but had to be abandoned because of lack of closure of the cavity. A left phrenic exeresis and scalenotomy was then performed and the patient kept on absolute bed rest. In October, 1935, the sputum had dropped to G ii, and the sedimentation rate was 16 mm. The cavity diminished in size to 3x4 cm. Thoracoplasty was advised and performed in December, 1935. The patient was discharged in March, 1936, an apparently arrested case, with a gain of 24 pounds, negative sputum for six months, and a sedimentation rate of 7 mm.

J. McC., an Irishman, aged 34, was admitted December 26, 1936, with a bilateral lesion and a cavity in the left first anterior interspace. Classification on admission was III a, weight 145, sputum G ii, and sedimentation rate 16 mm. Artificial pneumothorax was instituted successfully on the left and the sedimentation rate rose to 5 mm. on April 5, 1935. Two weeks later he developed a spontaneous pneumothorax and empyema and ran a stormy course for six weeks. The sedimentation rate dropped to 27 mm. The pleural cavity was irrigated with saline and as soon as stability was reached, oleothorax was instituted. As the empyema was brought under control, the sedimentation rate rose to 15 mm. in July, and to 10 mm. in October, when the oleothorax was completed. He was discharged, an arrested case, April 29, 1936, with a gain of 29 pounds, a negative sputum for eight months, and a sedimentation rate of 7 mm.

J. McB., an Irishman, aged 20, was admitted January 30, 1934, with a far advanced lesion involving both lungs. Classification on admission was III b, weight 110, sputum G iii, and sedimentation rate 22 mm. He was placed on absolute bed rest and in ten months transferred to the Municipal Sanatorium at Otisville, an apparently arrested case, with a gain of 25 pounds, negative sputum for five months, and a sedimentation rate of 15 mm. At Otisville, his sputum became positive and he was readmitted April 19, 1935, with a sedimentation rate of 16 mm. He was put back to bed and, though his sputum became negative, an annular shadow persisted in the right lung, and the sedimentation rate was 12 mm. A right phrenic exeresis and scalenotomy

was performed on October 25, 1935. He was discharged six months later with a negative sputum, and a sedimentation rate of 4 mm. Here is a case that was at first discharged before he was completely inactive.

W. H., an American, aged 40, was admitted September 26, 1935, with a moderately advanced lesion involving the upper two-thirds of the right lung. Classification on admission was II a, weight 130, sputum G ii, and sedimentation rate 27 mm. A right phrenic crush and scalenotomy were performed and after a period of bed rest, the patient was allowed exercise preliminary to discharge. His sedimentation rate had risen to 6 mm. on February 4, 1936, and x-ray showed considerable resolution of the exudative element. On April 22, 1936, the sedimentation report came back 18 mm. There had been no other evidence of trouble. On May 5th, he had a hemoptysis. In this case there was a drop of the sedimentation rate foretelling the pulmonary hemorrhage.

Conclusions

The sedimentation rate has been a useful adjunct in prognosis in pulmonary tuberculosis. It is an added index in foretelling the trend of the disease and is sometimes more sensitive than constitutional symptoms or x-ray in predicting the onset of acute exacerbations. It is a measure of active tissue destruction and therefore has no direct bearing on the extent of lung involvement or the presence or absence of tubercle bacilli except in so far as these are indices of active tissue destruction. Consequently, it is quite possible to find a normal sedimentation rate in the presence of a far advanced fibroid tuberculosis with an open cavity and positive sputum. But, in the final analysis, each case of tuberculosis is an individual problem and must be evaluated as such. It must be remembered, however, that the sedimentation test is not specific, is not infallible, and that a normal rate is not conclusive evidence of the absence of disease.

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President's Address

(Continued from page 8)

of the National Tuberculosis Association committee. So far, this year, the National committee has not taken any definite action. It is true that this is a subject that will require a lot of study and a lot of work. It is our hope, however, that before the end of another year, there will be definite action on the part of the committees from both these organizations and that definite steps will be underway to put into effect in all our medical schools undergraduate teaching in tuberculosis such as is now in effect in a few of our schools.

In conclusion, this organization, as it exists today, composed entirely of physicians whose work is devoted to some phase of tuberculosis, has come into existence because of the feeling that there are certain factors, vital to the solution of our tuberculosis problems, which, as yet, remain to be worked out. Today, I have attempted to outline at least some of these factors and to call attention to the rational course by which they can be worked out.

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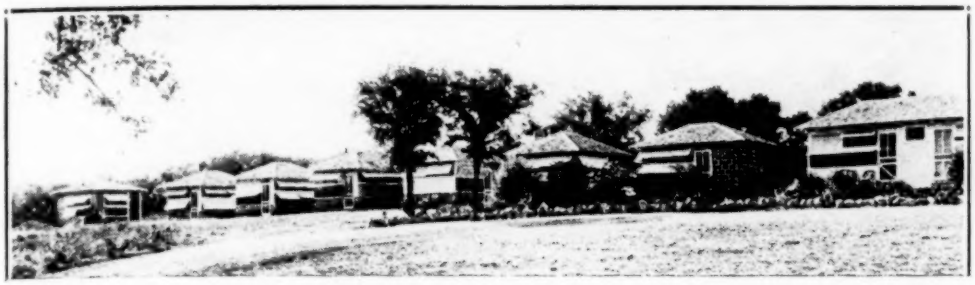

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NOTICE

The Second Annual Tuberculosis Seminar, at Asheville, will be held July 11-16. The number of physicians to take the course will be limited to twenty and the fee will be $10.00. Special attention will be given to early diagnosis and to both surgical and medical treatment. Outstanding laboratory and clinical facilities are available. Applications will be acted upon in the order in which they are received and prompt action is necessary for those who wish to avail themselves of this opportunity.

For Further Particulars Write To:

KARL SCHAFFLE, M. D.

Chairman, Tuberculosis Seminar

Asheville, North Carolina

Organization News

San Francisco Meeting.

The American College of Chest Physicians held its Fourth Annual Meeting at the St. Francis Hotel, San Francisco, California, on June 12th. More than 100 physicians registered from 16 states, Hawaii, and British Columbia.

The morning Session was devoted to administrative and committee reports. A revised Constitution and By-Laws was adopted and it will be printed in the 1938 Pneumothorax Directory of the American College of Chest Physicians. Copies of the directory will be mailed to each of the members. A resolution was adopted opposing legislation designed to hamper the use of living animals for scientific studies in experimental medicine. The resolution was presented by the California Society for the Promotion of Medical Research. Dr. Frank Walton Burge, Philadelphia, Pennsylvania, reported for the Board of Regents of the American College of Chest Physicans, and Dr. E. W. Hayes, Monrovia, California, reported on the committee for Medical School Education. Dr. Chas. M. Hendricks, El Paso, Texas, reported for the secretary-treasurer of the American College of Chest Physicians. In the absence of Dr. Louis Mark, Columbus, Ohio, chairman of the Sanatorium Committee; the report of the Sanatorium Committee was read by Dr. Frederick A. Slyfield, Seattle, Washington, a member of the Sanatorium Committee. The report of the Nominating Committee was presented by Dr. John H. Peck, Oakdale, Iowa. Dr. E. W. Hayes, President of the American College of Chest Physicians was introduced by Dr. Wm C. Voorsanger of San Francisco, Chairman of the Committee on General Arrangements for the meeting and President of the San Francisco County Medical Society. Dr. Hayes presided at the meeting and delivered the "Presidential Address" which is published elsewhere in this issue of the journal. Dr. Champ H. Holmes, Atlanta, Georgia, the incoming president, closed the morning Session with an inspiring address which will be published in a subsequent issue of this journal.

Round Table Discussion.

Dr. George Becker, Epidemiologist and Assistant Director of the San Francisco City and County Health Department delivered an interesting talk on "Tuberculosis from a Public Health Standpoint." The speaker was introduced by Dr. Ralph C. Matson, Portland, Oregon, President-Elect of the American College of Chest Physicians.

Scientific Session.

The Fourth Annual Scientific Session of the American College of Chest Physicians was held in the Borgia Room of the St. Francis Hotel, San Francisco, on the afternoon of June 12th. Dr. Harold G. Trimble, Oakland, California, Chairman of the Scientific Program Committee, presided.

Dr. Sumner Everingham, Oakland, California, presented a paper on "Extra-pleural Pneumothorax." The paper was discussed by Drs. Frank S. Dolley, Los Angeles, California; Emil Bogen, Olive View, California; and Frederick A. Slyfield, Seattle, Washington.

Dr. Chevalier L. Jackson and Dr. Frank W. Konzelmann, Philadelphia, Pennsylvania presented a paper with lantern slides on "Bronchial Adenoma." Dr. Alfred Goldman, San Francisco, California, discussed the paper.

Dr. John H. Peck, Oakdale, Iowa, gave a paper on "Tuberculosis in General Practice." The paper was discussed by Drs. James M. Odell, The Dalles, Oregon; Ralph C. Matson, Portland, Oregon; and Chesley Bush, Livermore, California.

The papers will be published in the future issues of *Diseases of the Chest.*

Banquet Speaker.

The Fellows of the American College of Chest Physicians were addressed at their annual banquet by Dr. Karl Meyer, Director of the Hooper Research Laboratories, San Francisco, California. Dr. Meyer spoke on "Host, Parasite Relationship." He was introduced by Dr. Wm. C. Voorsanger, Toastmaster for the evening. Guests of Honor who were introduced were Dr. and Mrs. Loren R. Chandler, Dean of the Stanford Medical School; Dr. and Mrs. Philip Pearson, President, California Tuberculosis Association; and Dr. and Mrs. George Becker, Assistant Director of the San Francisco City and County Health Department.

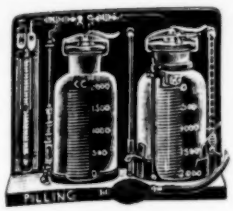
The Fellows of the American College of Chest Physicians, their wives and friends, were guests to a cocktail party given by Dr. and Mrs. Harry C. Warren preceding the annual banquet. Entertainment was furnished by the Neapolitan trio.

Women's Committee Entertains.

The wives of the visiting physicians were entertained for breakfast at the Cliff House, San Francisco, overlooking seal rock. A motor tour of the city was arranged by the committee. Members of the Women's Entertainment Committee were Mrs. Harry C. Warren, Chairman, Mrs. Ralph B. Scheier, and Mrs. Buford H. Wardrip.

Scientific Exhibit.

Dr. Clifford D. Mason, Livermore, California, prepared an interesting exhibit for the American College of Chest Physicians in the Section on Scientific Exhibits at the Municipal Auditorium, San Francisco. The exhibit consisted of



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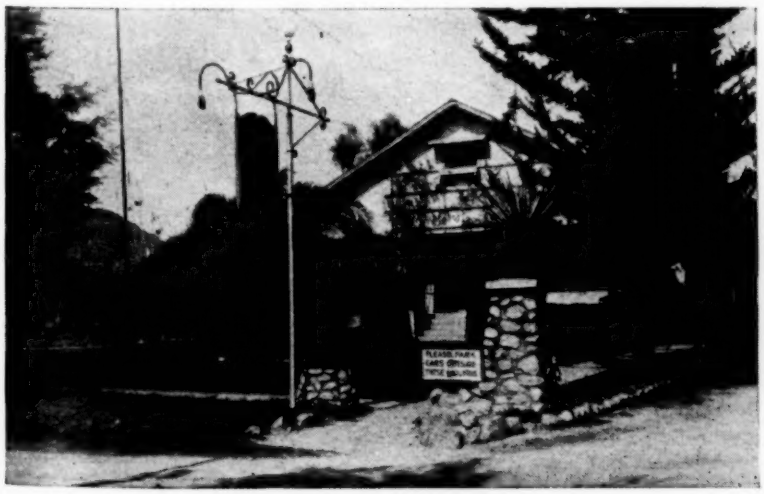

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three sections of slides shown in lighted view boxes. More than 100 of these slides were used to explain a series of interesting cases of childhood tuberculosis, preventoria care, collapse therapy, etc. Several hundred physicians registered at the booth for literature on tuberculosis. They will be mailed sample copies of "Diseases of the Chest."

Convention Cities Chosen for Three Years.

The American College of Chest Physicians will meet in annual session at St. Louis, Missouri, 1939; at New York, 1940; and at Cleveland, 1941. These cities were chosen by the American Medical Association for their annual meetings and the American College of Chest Physicians will meet at the above cities in connection with the American Medical Association.

Report of Board of Regents.

Frank Walton Burge, M.D., Chairman

The members of the Board of Regents have endeavored to grant Fellowship in the American College of Chest Physicians only to those physicians applying, who qualify as gentlemen and chest specialists of good training and at least five years' experience in the specialty.

As of May 6, 1938, 39 new members were admitted during 1938. It was necessary to reject 67 applicants, who applied for Fellowship from all over the United States, due to insufficient time in the specialty, insufficient training, practice not limited to chest diseases in communities that could support a chest specialist, etc. Four members resigned. The resignations came from New York State. Three members died. As of May 6, 1938, total membership was 483, but has since increased as since that date, a number of applicants have been accepted for Fellowship in the College. Four applications are still being considered by the Board of Regents.

A Certificate of Fellowship was designed and offered to the membership of the American College of Chest Physicians. As of June 10th, 1938, 221 Fellows have ordered certificates. Two hundred seventeen orders have been accepted and are now in process of mailing. Four orders are being held up, awaiting notification from our Treasurer that those physicians have paid their 1938 dues.

Dr. Burge Elected Director.

Dr. Frank Walton Burge, Philadelphia, Pennsylvania; Chairman of the Board of Regents of the American College of Chest Physicians and Editor of Diseases of the Chest was elected a member of the Board of Directors of the Philadelphia County Medical Society for three years.

SOCIETY NEWS

Dr. William W. Buckingham, Kansas City, Missouri, a Fellow of the American College of Chest Physicians, delivered a paper on "Indications for Collapse Measures in Pulmonary Tuberculosis" before the Jackson County Medical Society, Kansas City, Missouri on May 24th.

Dr. Irving L. Applebaum, Newark, New Jersey, a Fellow of the American College of Chest Physicians discussed a paper on "Childhood Tuberculosis" before the Second Annual Meeting of the New Jersey Association of School Physicians held at Atlantic City, New Jersey, May 20th.

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